## CLAIM AMENDMENTS

**IN THE CLAIMS**

This listing of the claims will replace all prior versions, and listing, of claims in the application or previous response to office action:

1. (Currently Amended) **A motor**~~**Motor**~~ vehicle electric system comprising

- an internal combustion engine and, mechanically connected thereto, an integrated starter-generator that charges a double layer capacitor and a **first** battery to a first voltage via a bi-directional AC/DC converter in generator mode and is driven by the energy stored in the double layer capacitor or in the battery in motor mode, ~~**wherein**~~ an intermediate circuit capacitor is arranged between the positive and negative direct voltage terminals of the bi-directional AC/DC converter, a first switch is provided via which the positive direct voltage terminal of the bi-directional AC/DC converter can be connected to the plus pole of the battery, the minus pole of ~~**which**~~ **the AC/DC converter** is grounded, and a second switch is provided via which the positive direct voltage terminal of the bi-directional AC/DC converter can be connected to the positive terminal of the double layer capacitor, the negative terminal of **said AC/DC converter**~~**which**~~ is grounded.

2. (Currently Amended) **A motor**~~**Motor**~~ vehicle electric system according to Claim 1, wherein the first and second switches are interlinked in such a way that they cannot both be in the conducting position at the same time.

3. (Currently Amended) **A motor**~~**Motor**~~ vehicle electric system according to Claim 1, wherein the intermediate circuit capacitor can be charged from the AC/DC converter to a voltage value corresponding to the voltage at the double layer capacitor or the **first** battery before the first or second switch is switched to the conducting position.

4. (Currently Amended) **A motor**~~**Motor**~~ vehicle electric system according to Claim 1, wherein the flow of current into the AC/DC converter or out of the AC/DC converter can be reduced to a minimal value before the first or second switch is switched to the non-conducting position.

5. (Canceled).

6. (Currently Amended) **A motor**~~Motor~~ vehicle electric system according to Claim 1, wherein the double layer capacitor is charged to an elevated voltage higher than the voltage of the **first** battery.

7. (Original) Motor vehicle electric system according to Claim 1, comprising an additional battery to supply additional loads with a second voltage, which additional battery is charged via a bi-directional DC/DC converter by the battery, wherein a third switch is provided via which the plus pole of the first battery can be connected to a positive terminal of the bi-directional DC/DC converter, and a fourth switch is provided via which the positive terminal of the double layer capacitor can be connected with the same positive terminal of the bi-directional DC/DC converter.

8. (Currently Amended) **A motor**~~Motor~~ vehicle electric system according to Claim[[7]]1, wherein the third and fourth switches are interlinked in such a way that they cannot both be in the conducting position at the same time.

9. (Original) Motor vehicle electric system according to Claim 1, comprising a control/regulation circuit for controlling /regulating operations from the group of

- charging the intermediate circuit capacitor via the AC/DC converter to a voltage value corresponding to the voltage at the double layer capacitor or the 36 V battery,
- determining the working direction of the converters (step-up or step-down), and
- controlling the positions of switches S1 to S4.

10. (Currently Amended) **A motor**~~Motor~~ vehicle electric system according to Claim 1, wherein

- when the integrated starter-generator is in generator mode:

- the intermediate circuit capacitor is charged to a predefinable voltage when the switches are non-conducting,
- the **first** battery is charged when the first switch is conducting and
- the double layer capacitor is charged when the second switch is conducting and
- when the integrated starter-generator is in motor mode:
- the starter-generator is driven with energy from the **first** battery when the first switch is conducting and
- the starter-generator is driven with energy from the double layer capacitor when the second switch is conducting.

11. (Currently Amended) **A motor** ~~Motor~~ vehicle electric system according to Claim **1** ~~7~~, wherein

- the **first** battery charges or is charged by the ~~additional~~ **second** battery when the third switch is conducting and
- the double layer capacitor charges or is charged by the ~~additional~~ **second** battery when the fourth switch is conducting.

12. (Currently Amended) Motor vehicle electric system according to Claim 8, wherein

- the **first** battery charges or is charged by the ~~additional~~ **second** battery when the third switch is conducting and
- the double layer capacitor charges or is charged by the **second** ~~additional~~ battery when the fourth switch is conducting.

13. (Currently Amended) **A method** ~~Method~~ of operating a motor vehicle electric system comprising an integrated starter-generator**,** ~~comprising~~ the steps ~~of~~ **comprising**:

- charging a double layer capacitor and a battery to a first voltage via a bi-directional AC/DC converter in a generator mode,

- driving the starter-generator by the energy stored in the double layer capacitor or in the battery in a motor mode,

- arranging an intermediate circuit capacitor between the positive and negative direct voltage terminals of the bi-directional AC/DC converter,

- providing a first switch via which the positive direct voltage terminal of the bi-directional AC/DC converter can be connected to the plus pole of the battery, the minus pole of ~~which~~ **the AC/DC converter** is grounded, and

- providing a second switch via which the positive direct voltage terminal of the bi-directional AC/DC converter can be connected to the positive terminal of the double layer capacitor, the negative terminal of ~~which~~ **the AC/DC converter** is grounded.

14. (Currently Amended) **A method** ~~Method~~ according to Claim 13, further comprising the step of interlinking the first and second switches in such a way that they cannot both be in the conducting position at the same time.

15. (Currently Amended) **A method** ~~Method~~ according to Claim 13, further comprising the step of charging the intermediate circuit capacitor from the AC/DC converter to a voltage value corresponding to the voltage at the double layer capacitor or the battery before the first or second switch is switched to the conducting position.

16. (Currently Amended) **A method** ~~Method~~ according to Claim 13, further comprising the step of reducing the flow of current into the AC/DC converter or out of the AC/DC converter to a minimal value before the first or second switch is switched to the non-conducting position.

17. (Canceled).

18. (Currently Amended) **A method** ~~Method~~ according to Claim 13, further comprising the step of charging the double layer capacitor to an elevated voltage higher than the voltage of the battery.

19. (Original) Method according to Claim 13, further comprising the steps of:

- charging an additional battery via a bi-directional DC/DC converter by the battery,
- providing a third switch via which the plus pole of the first battery can be connected to a positive terminal of the bi-directional DC/DC converter, and
- providing a fourth switch via which the positive terminal of the double layer capacitor can be connected with the same positive terminal of the bi-directional DC/DC converter.

20. (Currently Amended) **A method** ~~**Method**~~ according to Claim 19, further comprising the step of interlinking the third and fourth switches in such a way that they cannot both be in the conducting position at the same time.

21. (Currently Amended) **A method** ~~**Method**~~ according to Claim 13, further comprising the step**s** of ~~**controlling /regulating operations from the group of**~~:

- charging the intermediate circuit capacitor via the AC/DC converter to a voltage value corresponding to the voltage at the double layer capacitor or the 36 V battery,
- determining the working direction of the converters (step-up or step-down), and
- controlling the positions of **the** switches ~~**S1 to S4**~~.

22. (Original) Method according to Claim 13, further comprising the steps of

- when the integrated starter-generator is in generator mode:
- charging the intermediate circuit capacitor to a predefinable voltage when the switches are non-conducting,
- charging the battery when the first switch is conducting and
- charging the double layer capacitor when the second switch is conducting and
- when the integrated starter-generator is in motor mode:
- driving the starter-generator with energy from the battery when the first switch is conducting and

- driving the starter-generator with energy from the double layer capacitor when the second switch is conducting.

23. (Original) Method according to Claim 19, further comprising the step of

- the battery charges or is charged by the additional battery when the third switch is conducting and

- the double layer capacitor charges or is charged by the additional battery when the fourth switch is conducting.

24. (Original) Method according to Claim 20, further comprising the step of

- the battery charges or is charged by the additional battery when the third switch is conducting and

- the double layer capacitor charges or is charged by the additional battery when the fourth switch is conducting.

25. (Allowable) A motor vehicle electric system comprising an internal combustion engine and, mechanically connected thereto, an integrated starter-generator that charges a double layer capacitor and a battery to a first voltage via a bi-directional AC/DC converter in generator mode and is driven by the energy stored in the double layer capacitor or in the battery in motor mode, wherein an intermediate circuit capacitor is arranged between the positive and negative direct voltage terminals of the bi-directional AC/DC converter, a first switch is provided via which the positive direct voltage terminal of the bi-directional AC/DC converter can be connected to the plus pole of the battery, the minus pole of the converter is grounded, and a second switch is provided via which the positive direct voltage terminal of the bi-directional AC/DC converter can be connected to the positive terminal of the double layer capacitor, the negative terminal of the converter is grounded, whereby the system is operable to

- charge the intermediate circuit capacitor via the AC/DC converter to a voltage value corresponding to the voltage at the double layer capacitor or the 36 V battery,

- determine the working direction of the converters (step-up or step-down), and

- control the positions of switches.

26. (Allowable) A motor vehicle electric system comprising an internal combustion engine and, mechanically connected thereto, an integrated starter-generator that charges a double layer capacitor and a battery to a first voltage via a bi-directional AC/DC converter in generator mode and is driven by the energy stored in the double layer capacitor or in the battery in motor mode, wherein an intermediate circuit capacitor is arranged between the positive and negative direct voltage terminals of the bi-directional AC/DC converter, a first switch is provided via which the positive direct voltage terminal of the bi-directional AC/DC converter can be connected to the plus pole of the battery, the minus pole of the converter is grounded, and a second switch is provided via which the positive direct voltage terminal of the bi-directional AC/DC converter can be connected to the positive terminal of the double layer capacitor, the negative terminal of the converter is grounded wherein

- when the integrated starter-generator is in generator mode:
- the intermediate circuit capacitor is charged to a predefinable voltage when the switches are non-conducting,
- the battery is charged when the first switch is conducting,
- the double layer capacitor is charged when the second switch is conducting, and
- when the integrated starter-generator is in motor mode:
- the starter-generator is driven with energy from the battery when the first switch is conducting, and
- the starter-generator is driven with energy from the double layer capacitor when the second switch is conducting.

27. (Allowable ) A method of operating a motor vehicle electric system comprising an integrated starter-generator comprising the steps of:

- charging a double layer capacitor and a battery to a first voltage via a bi-directional AC/DC converter in a generator mode,

- driving the starter-generator by the energy stored in the double layer capacitor or in the battery in a motor mode,

- arranging an intermediate circuit capacitor between the positive and negative direct voltage terminals of the bi-directional AC/DC converter,

- providing a first switch via which the positive direct voltage terminal of the bi-directional AC/DC converter can be connected to the plus pole of the battery, the minus pole of the converter is grounded,

- providing a second switch via which the positive direct voltage terminal of the bi-directional AC/DC converter can be connected to the positive terminal of the double layer capacitor, the negative terminal of the converter is grounded,

- charging an additional battery via a bi-directional DC/DC converter by the battery,

- providing a third switch via which the plus pole of the first battery can be connected to a positive terminal of the bi-directional DC/DC converter, and

- providing a fourth switch via which the positive terminal of the double layer capacitor can be connected with the same positive terminal of the bi-directional DC/DC converter.

28. (New) A method according to Claim 27, further comprising the step of interlinking the third and fourth switches in such a way that they cannot both be in the conducting position at the same time.

29. (New) A method according to Claim 27, further comprising the step of

- the battery charges or is charged by the additional battery when the third switch is conducting, and

- the double layer capacitor charges or is charged by the additional battery when the fourth switch is conducting.

30. (New) A method according to Claim 28, further comprising the step of

- the battery charges or is charged by the additional battery when the third switch is conducting, and

- the double layer capacitor charges or is charged by the additional battery when the fourth switch is conducting.